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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/255,892	02/23/1999	CHARLES EDWARD BOICE	EN998082	9132

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KEVIN P RADIGAN  
HESLIN & ROTHENBERG  
5 COLUMBIA CIRCLE  
ALBANY, NY 122035160

EXAMINER

AN, SHAWN S

ART UNIT

PAPER NUMBER

2613

20

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/255,892

Applicant(s)  
Boice et al.

Examiner  
Shawn An

Art Unit  
2613



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on May 27, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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## **DETAILED ACTION**

### ***Continued Prosecution Application***

1. The request filed on 5/27/03 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/255,892 is acceptable and a CPA has been established. An action on the CPA follows.

### ***Response to Amendment***

2. As per Applicant's instruction in Paper 19 as filed on 5/17/03, claims 1, 18, and 29 have been amended.

### ***Response to Remarks***

3. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b).

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Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-4, 10-12, 18-20, 23-25, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Wheeler et al (5,825,680).

**Regarding claim 29**, Wheeler et al discloses a computer product (Fig. 1) comprising a medium having program means for use in encoding a sequence of video data comprising:

computer program means (CPU) for storing within a quantizer multiple sets of quantization matrix tables (Col. 13, lines 28-32) at the same time, comprising separate, independent sets of quantization (Q) matrix tables comprising at least one intra matrix table and at least one non-intra matrix table (690);

computer program means for quantizing video data in a single pass using at least one set of quantization (Q) matrix tables of the multiple sets of Q matrix tables (Fig. 7, 644); and

computer program means for dynamically switching in real time (col. 5, lines 25-27) the quantizing during the single pass from using one set of the Q tables to using another set of Q matrix tables of the multiple sets of Q matrix tables, wherein the dynamically switching occurs without requiring stopping of the encoding process (col. 13, Lines 28-32); and

computer program code means for allowing updating of the one set of quantization matrix tables of the multiple sets of Q matrix tables within the quantizer while the another set of quantization matrix tables is in use by the quantizer (col. 9, lines 25-36).

**Regarding claims 1 and 18**, Wheeler et al discloses an encoder comprising:

storage within a quantizer for holding multiple sets of quantization matrix tables (Fig. 7, 690) at the same time, comprising separate, independent sets of quantization (Q) matrix tables (Intra Table; Non-Intra (inter) Table) );

a quantizer (644) for quantizing video data in a single pass using at least one set of Q matrix tables of the multiple sets of Q matrix tables;

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means for dynamically switching in real time (col. 5, lines 25-27) the quantizer during the single pass quantizing from using one set of the Q tables to using another set of Q matrix tables of the multiple sets of Q matrix tables, wherein the dynamically switching occurs without requiring stopping of the encoding process (col. 13, lines 28-32); and

means for allowing updating of the one set of quantization matrix tables of the multiple sets of Q matrix tables within the quantizer while the another set of quantization matrix tables is in use by the quantizer (col. 9, lines 25-36).

**Regarding claims 2 and 19,** Wheeler et al discloses switching the quantizer from using one set of the Q tables to using another set of Q matrix tables of the multiple sets of Q matrix tables at a picture boundary of the sequence of video data (col. 13, lines 28-32).

**Regarding claims 3, 12, 20, and 25,** Wheeler et al discloses dynamically switching one set of Q matrix tables to another set of Q matrix tables without delaying encoding of video data or dynamically (real time) changing Q matrix tables (col. 13, lines 28-32).

**Regarding claim 4,** Wheeler et al discloses the use of conventional table set register (692) to control switching of the quantizer.

**Regarding claims 10-11 and 23-24,** Wheeler et al discloses quantization matrix tables comprising an intra luminance table, a non-intra luminance table, an intra chrominance table, and a non-intra chrominance table (Fig. 7, 690; col. 8, lines 16-24).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims (5-6, 9), and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler et al as applied to claims 1 and 18 above, respectively, and further in view of Hang et al (5,710,595).

**Regarding claims 5-6, 9, and 21**, Wheeler et al does not specifically disclose having a default quantization matrix table.

However, Hang et al teaches utilizing a default quantization matrix table (abs.).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an encoder as taught by Wheeler et al to incorporate Hang et al's teaching so that at least one table or multiple tables of the set of Q matrix tables comprise default quantization matrix tables pursuant to MPEG standard to insure the conventional level of image quality.

8. Claims 7-8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler et al as applied to claims 1 and 18 above, respectively, and further in view of Riek et al (5,987,179).

**Regarding claims 7-8 and 22**, Wheeler et al does not particularly disclose Q tables comprising user's custom quantization matrix tables.

However, Riek et al discloses utilizing custom quantization matrix tables (Col. 5, lines 36-38) to insure the desired level of image quality.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an encoder as taught by Wheeler et al to incorporate a conventional custom quantization matrix tables as taught by Riek et al so that at least one table or multiple tables of the set of Q matrix tables comprise custom quantization matrix tables to insure the desired level of image quality.

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9. Claims 13-17 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler et al as applied to claims 1 and 18 above, respectively, and further in view of Hosono (5,796,438).

**Regarding claims 13 and 26,** Wheeler et al does not particularly disclose a compressed store interface for outputting a compressed bitstream for dynamically outputting a Q matrix extension start code in the compressed bitstream.

However, Hosono discloses a compressed store interface for outputting a compressed bitstream for dynamically outputting a Q matrix extension start code in a compressed bitstream (Col. 10, lines 1-38) in order to access multiple sets of Q matrix tables.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an encoder as taught by Wheeler et al to incorporate a teaching of compressed store interface for outputting a compressed bitstream for dynamically outputting a Q matrix extension start code as taught by Hosono in order to access multiple sets of Q matrix tables.

**Regarding claims 14,** The Examiner takes official notice that it is considered an obvious feature for the compressed store interface to have a storage in order to hold the multiple sets of Q matrix tables.

**Regarding claims 15-17 and 27-28,** Wheeler et al discloses that during encode and decode, the CPU loads the tables as required and CPU being responsible for updating Q tables on video stream context switches (Col. 13, lines 30-31), which clearly anticipates switching one set of Q matrix tables to another set of Q matrix tables without delaying or pausing encoding of video data or dynamically (real time) changing Q matrix tables or while quantizing the sequence of video data.

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*Conclusion*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn An whose telephone number (703) 305-0099 and schedule are Tuesday-Friday.

SHAWN S. AN  
PATENT EXAMINER



SSA

July 9, 2003